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Please find below and/or attached an Office communication concerning this application or proceeding.

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U.S. G.P.O. 2000 ; 465-188/25268

Office Action Summary	Application No. 08/888,361	Applicant(s) Barson, Paul Colin et al
	Examiner Wilbert L. Starks, Jr.	Group Art Unit 2762

☒ Responsive to communication(s) filed on *Jul 24, 2000*.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-6, 8, and 10-29* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-6, 8, and 10-29* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 24 JULY 2000 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 1-6, 8, 10-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt et al. (U.S. Patent Number 5,365,574; Dated 11/15/1994; Class 379; Subclass 88.02) in view of Gillick et al. (U.S. Patent Number 4,837,831; Dated 06/06/1989; Class 704; Subclass 245).

Claim 1

Hunt et al. Discloses the following aspects of the claimed invention:

Claim 1's "(i) creating a signature comprising a plurality of parameters related to the transmission of messages over that time period wherein the parameters comprise at least one parameter related to the transmission of messages over a portion of the period and also related to the position of the portion in the period, to enable output data to be derived from the stored information;" is anticipated by Hunt et al col. 7, lin. 15-21, where it recites

> "In particular, as speech is input to the system 14, a feature extractor 60 extracts a set of primary features that are computed in real time **every 10 milliseconds**. The primary features include heuristically-developed time domain features (e.g., **zero crossing rates**) and frequency domain information such as Fast Fourier Transform ("FFT") coefficients."

Claim 1's "(iv) inputting the signatures to the anomaly detector; and " is anticipated by Hunt et al col. 8, lin. 9-54.

Claim 1's "(v) processing the signatures using the anomaly detector to derive the anomalies by detecting unexpected patterns in the transmission of messages by the entity over the time period." is anticipated by Hunt et al col. 8, lin. 9-54.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature disclosed as follows:

> Claim 1's "(ii) creating a second signature comprising a plurality of parameters related to the transmission of messages over a second period shorter than the first and more recent than the first;"
>
> Claim 1's "(iii) updating the first signature by a weighted averaging with the second signature;"

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claim 1.

Claim 2

Claim 2's "a method as claimed in claim 1 wherein the first signature is created in one of a plurality of possible formats." is anticipated by Hunt et al col. 8, lin. 10-46.

Claim 3

Claim 3's "a method as claimed in claim 2 wherein the format of the first signature comprises the length of the signature." is anticipated by Hunt et al col. 9, lin. 18-20 where it recites "d(i) is the resultant weighted Euclidean distance measure for the ith digit in the current password entry sequence." This is the Euclidean length of the vector.

Claim 4

Claim 4's "a method as claimed in claim 1 wherein said at least one parameter represents the number of events made in the portion of the first time period as a porportion of the total number of events made in the whole first time period." is anticipated by Hunt et al col .7, lin. 17-20.

Claim 5

Claim 5's "a method as claimed in claim 1 wherein said at least one parameter represents the number of events of a predetermined type made in the whole first time period as a proportion of the total number of events made in the whole first time period." is anticipated by Hunt et al col. 7, lin. 17-26.

Claim 6

Claim 6's "storing information about each of a number of events which occurred during the first time period;" is anticipated by Hunt et al col. 7, lin. 17-30.

Claim 6's "selecting attributes from this information; and" is anticipated by Hunt et al col. 7, lin. 17-30.

Claim 6's "converting the attributes into first said signature." is anticipated by Hunt et al col. 7, lin. 17-30.

Claim 8

Claim 8's "A method as claimed in Claim 1 wherein said anomaly detector comprises a neural network." is anticipated by Hunt et al col. 9, lin. 28-47; col. 7, lin. 64-68.

Claims 10, 11, 20, and 21

Hunt et al discloses the features of the claims 10, 11, 20, and 21, but Hunt et al does not expressly disclose the use of a predictive model.

Gillick et al discloses that the use of a predictive model produces a more accurate output.

> "frames comprised of linear **predictive coding parameters** can be used with the present invention instead of frames of spectral parameters" Gillick et al, col. 32, lin. 25-27.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the predictive model from Gillick et al in Hunt et al.

Motivation -- A more accurate output would have been a highly desirable feature in the detection art due to its efficiency and Gillick et al recognizes that a more accurate system would be expected when the predictive model of Gillick et al is substituted for the conventional signatures of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claims 10, 11, 20, and 21.

Claim 12

Hunt et al. Discloses the following aspects of the claimed invention:

Claim 12's "(i) an input arranged to receive information about each of a number of events which occurred during the time period;" is anticipated by Hunt et al col. 7, lin. 14-16.

Claim 12's "(iii) an anomaly detector;" is anticipated by Hunt et al col. 7, lin. 35-41.

Claim 12's "(iv) an input arranged to provide the signatures to the anomaly detector, and " is anticipated by Hunt et al col. 7, lin. 30-35.

Claim 12's "(v) wherein the anomaly detector is arranged to process the signatures to derive the anomalies by detecting unexpected patterns in the transmission of messages by the entity over the time period." is anticipated by Hunt et al col. 7, lin. 30-41.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature disclosed as follows:

> "(ii) a processor arranged to convert the information into a signature comprising a plurality of parameters related to the transmission of messages over the time period wherein the parameters comprise at least one parameter related to the transmission of messages over a portion of the period and also related to the position of the portion in the period, to enable output data to be derived from the stored information and wherein said processor is further arranged to convert at least part of the information into a **second signature**, comprising a plurality of parameters related to the transmission of messages over a second period, shorter than the first and more recent than the first; and also to **update** the first signature by a **weighted averaging** with the second signature;"

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claim 12.

Claim 13-19 and 22

Hunt et al discloses the conventional use of neural networks to detect anomalies in voice data.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature.

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claims 13-19 and 22.

Claim 22

Claim 22's "an input arranged to receive information about the transmission of messages by the entity;" is anticipated by Hunt et al col. 7, lin. 15-17.

Claim 22's "an anomaly detector; " is anticipated by Hunt et al col. 8, lin. 9-67.

Claim 22's "an input arranged to provide the signatures to the anomaly detector, and wherein said anomaly detector is arranged to process the signatures to derive the anomalies by detecting unexpected patterns in the transmission of message by the entity over the time period." is anticipated by Hunt et al col. 8, lin. 9-67.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature disclosed as follows:

> "a processor arranged to create a first signature comprising a plurality of parameters related to the transmission of messages over a predetermined first time period and to create a second signature comprising a plurality of parameters related to the transmission of messages over a second period shorter than the first and more recent than the first;" is anticipated by Hunt et al col. 7, lin. 15-17.
>
> "a processor arranged to calculate a weighted averaging of the first and second signatures to form an updated first signature;" is anticipated by Hunt et al col. 7, lin. 64-68.

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claim 22.

Claim 23

Claim 23's "(i) creating a first signature comprising a plurality of parameters related to the associated telephone calls over that time period," is anticipated by Hunt et al col. 7, lin. 15-21, where it recites

> "In particular, as speech is input to the system 14, a feature extractor 60 extracts a set of primary features that are computed in real time **every 10 milliseconds**. The primary features include heuristically-developed time domain features (e.g., **zero crossing rates**) and frequency domain information such as Fast Fourier Transform ("FFT") coefficients."

Claim 23's "(iv) inputting the signatures to the anomaly detector; and " is anticipated by Hunt et al col. 8, lin. 9-54.

Claim 23's "(v) processing the signatures using the anomaly detector to derive the potentially fraudulent telephone calls by detecting unexpected patterns in the telephone calls associated with the entity over the time period." is anticipated by Hunt et al col. 8, lin. 9-54.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature disclosed as follows:

> (ii) creating a second signature comprising a plurality of parameters related to the associated telephone calls over a second period shorter than the first and more recent that the first;
> (iii) updating the first signature by a weighted averaging with the second signature;

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claim 23.

Claim 24

24. A method as claimed in claim 23 wherein the first signature is created in one of a plurality of predetermined possible formats." is anticipated by Hunt et al col. 7, lin. 17-26.

Claim 25

25. A method as claimed in claim 24 wherein the format of the first signature comprises the length of the signature." is anticipated by Hunt et al col. 9, lin. 18-20 where it recites "d(i) is the resultant weighted Euclidean distance measure for the ith digit in the current password entry sequence." This is the Euclidean length of the vector.

Claim 26

26. A method as claimed in claim 23 wherein at least one parameter of the first signature is related to the transmission of messages over a portion of the period and also related to the position of the portion in the period." is anticipated by Hunt et al col. 7, lin. 15-21, where it recites

> "In particular, as speech is input to the system 14, a feature extractor 60 extracts a set of primary features that are computed in real time **every 10 milliseconds**. The primary features include heuristically-developed time domain features (e.g., **zero crossing rates**) and frequency domain information such as Fast Fourier Transform ("FFT") coefficients."

Claim 27

27. A method as claimed in claim 26 wherein said at least one parameter represents the number of events made in the portion of the first time period as a proportion of the total number of events made in the whole, first time period." is anticipated by Hunt et al col .7, lin. 17-20.

Claim 28

28. A method as claimed in claim 26 wherein said at least one parameter represents the number of events of a predetermined type made in the portion of the first time period as a proportion of the total number of events of the same type made in the whole first time period." is anticipated by Hunt et al col. 7, lin. 17-26.

Claim 29

29. A computer system for detecting potentially fraudulent telephone calls from telephone calls associated with an entity over time, the system comprising:

Claim 29's "(i) an input arranged to receive information about the telephone calls associated with the entity;" is anticipated by Hunt et al col. 7, lin. 15-21, where it recites

> "In particular, as speech is input to the system 14, a feature extractor 60 extracts a set of primary features that are computed in real time **every 10 milliseconds**. The primary features include heuristically-developed time domain features (e.g., **zero crossing rates**) and frequency domain information such as Fast Fourier Transform ("FFT") coefficients."

Claim 29's "(iii) an anomaly detector;" is anticipated by Hunt et al col. 8, lin. 9-54.

Claim 29's "(iv) an input arranged to provide the signatures to the anomaly detector; and wherein said anomaly detector is arranged to process the signatures to derive the potentially fraudulent telephone calls by detecting unexpected patterns in the telephone calls associated with the entity over the predetermined time period." is anticipated by Hunt et al col. 8, lin. 9-54.

Hunt et al, however, does not expressly disclose the updating of the first signature by making a weighted average with a second updating signature disclosed as follows:

> (ii) a processor arranged to create a first signature comprising a plurality of parameters related to the telephone calls over a predetermined first time period and to create a second signature comprising a plurality of parameters related to the telephone calls over a second period shorter than the first and more recent than the first; and wherein the processor is arranged to calculate a weighted averaging of the first and second signatures to form an updated first signature;

Gillick et al discloses in claim 5 that the use of an updating step that uses a weighted average between the longer historical signature with a shorter updating signature produces a weighted composite signature of the time series data:

> "...said comparing includes deriving a series of smoothed frames from said sequence of individual frames, each of said smoothed frames being derived from a **weighted average of a plurality of individual frames**, and comparing at least one of said smoothed frame against said cluster models" (emphasis added.)

The prior art reference did not limit the relative sizes of the time frames in the claim, so the broadest reasonable interpretation of the art encompasses the use of a longer historical signature and a shorter updating signature.

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the updating method from Gillick et al in Hunt et al.

Motivation -- The ability to more heavily weight certain portions of the historical signature data would have been a highly desirable feature in the recognition art due to its ability to allow

one to pay more attention to more relevant time periods in the signal and Gillick et al recognizes that the ability to more heavily weight certain portions of the historical signature data would be expected when the updating method of Gillick et al is substituted for the conventional signature of Hunt et al.

Therefore, it would have been obvious, to one of ordinary skill in the art, to combine Gillick et al with Hunt et al to obtain the invention as specified in claim 29.

Conclusion

4. In the Remarks, Applicant argues, in substance, that:

(1) "...the detecting of anomalies in the in the transmission if messages by an entity..." is concrete and tangible.

(2) "...Hunt et al do not describe a method of detecting anomalies..."

(3) the feature extractor of Hunt does not operate over a time period.

(4) Hunt et al does not extract a feature which is related to transmission of messages over a portion of the period and also related to the position of the portion within the period.

(5) Hunt et al has no weighted averaging.

(6) Since Hunt et al is concerned with the recognition of digits and checking that a voice matches one of a list of known voices, those digits and voices are not "messages".

(7) Hunt et al does not determine the number of "events" within a time period -- only "zero crossings."

(8) Hunt et al does not describe the use of a neural network.

Regarding Applicant's argument (1), Applicant does not limit the words "anomaly" or "entity" in the claim. Beginning with the word "entity" Examiner looks to Merriam Webster's Collegiate Dictionary, Tenth Edition for a definition:

> "...1 a: BEING, EXISTENCE; esp :independent separate, or self-contained existence b: **the existence of a thing as contrasted with its attributes** 2: **something** that has separate and distinct existence and objective or conceptual reality"(emphasis added.)

Usually a claimed invention is properly rejected under 35 U.S.C. 101 if it is seen that its mathematical or logical attributes are claimed abstractly from its practical application in the art. In the present application, the limitation "entities" is used that is not only abstract from practical application, but it is abstract from any particular **attributes** -- mathematical/logical or not. This is abstract in the extreme.

Furthermore, without knowledge of what the "entity" is limited to, it is impossible to determine what kind of data is being sent and, thus, what kind of "anomalies" are being detected. Are the claimed "anomalies" supposed to be anomalous time domain signatures in analog speaker-

dependent voice data? (such as the voice verification aspect of the prior art) Are they incorrect information in the speaker-independent content of voice data? (such as the password numbers aspect of the cited prior art) Are they anomalous frequency domain signatures of the time period? (such as the FFT aspect of the prior art)

Applicant does not specify this information in the claim.

The claims are not in means-plus-function format, so the limitations that Applicant recites from the Specification cannot be "read into" the claim. Applicant's argument is unpersuasive.

The claim is not limited to a practical application and, on that basis, the 101 rejection stands.

Regarding Applicant's argument (2), Applicant has not limited the term "anomaly" in his claim. The examples in the selected prior art of speaker-dependent and speaker-independent systems are well within the broadest reasonable interpretation of the unlimited "anomaly" term of the claimed invention. Applicant's argument is unpersuasive.

Regarding Applicant's argument (3), the fact that it is sampled over a time period is clear in the text itself: "a feature extractor 60 extracts a set of primary features that are computed in real time every 10 milliseconds." Hunt et al, col.7, lin. 14-17. Applicant's argument is unpersuasive.

Regarding Applicant's argument (4) please note that the prior art says the following: "The primary features include heuristically-developed time domain features (**e.g.**, zero crossing rates)

and frequency domain information **such as** Fast Fourier Transform ("FFT") coefficients."Hunt et al, col.7, lin. 17-21.

The prior art anticipated time and frequency domain features in general -- zero crossing rates and FFT coefficients are but examples of the anticipated features. In the broadest reasonable interpretation of the art, the features described by Applicant are time domain features and are anticipated by the prior art. Applicant's argument is unpersuasive.

Regarding Applicant's argument (5) Examiner applies new art in a 103(a) rejection to clarify that weighted averaging in this context is anticipated by the prior art.

Regarding Applicant's argument (6), Hunt et al is a system for use on the telephone network. Messages come over the network and are recognized and verified by the prior art invention. Applicant's argument is unpersuasive.

Regarding Applicant's argument (7), Applicant has not limited in the claims what "events" the invention is to work with. "Zero crossings" are well within the broadest reasonable interpretation of the prior art. Applicant's argument is unpersuasive.

Regarding Applicant's argument (8), Hunt et al describes the use of **two** neural networks. The first recited in that reference can be found in Hunt et al, col. 7, lin. 64-68 and col. 8, lin. 1-30. The name for this kind of neural system is the "Autoassociative OLAM (Optimal Linear Associative Memory)" see Kosko, Bart, *Neural Networks and Fuzzy Systems: A Dynamical Systems Approach to Machine Intelligence*, 1992, pp. 83-85. On page 85 of that reference, it is noted that "nonnull novelty vectors may indicate disorders or **anomalies**." (emphasis added)

Kosko, Bart, pp. 85. The second neural network is found in Hunt et al, col. 8, lin. 55-68 and col. 9, lin. 1-68. That neural network is called the "perceptron" and it is best illustrated in the textbook Hassoun, Mohamad H., Fundamentals of Artificial Neural Networks, The MIT Press, 1995, pp. 57-62. It is a weighted sum that is subsequently thresholded. These systems are present in the prior art and clear to persons of ordinary skill in the art. Applicant's argument is unpersuasive.

5. Since the change in art for some of the rejections made above were not necessitated by amendment, this action is made nonfinal.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (703) 305-0027. Alternatively, inquiries may be directed to Supervising Patent Examiner Tariq Hafiz whose telephone number is (703) 305-9643.

Tariq R. Hafiz
Supervisory Patent Examiner
Technology Center 2700